

Application No.: 09/994,613
Reply to Office Action of: November 26, 2003
Amendment Dated: February 11, 2004

AMENDMENTS TO THE CLAIMS

Listing of Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Previously Presented) A bonding composition for tooth tissue, comprising:
a mixture of a (meth)acryloyloxyalkyl phosphate,
a water-soluble film-forming agent,
a form-retaining agent selected from the group consisting of a sand balloon, a glass balloon, a glass fiber having a mean particle size between 1 and 300 micron, a piece of hollow glass fiber, a glass bead, glass powder, powder of a natural mineral, beads of a cross linked polymer, flakes of a cross linked polymer and an organic/inorganic composite material containing a cross linked polymer,
water, and
a curing agent;
wherein a calcium salt formed from said (meth)acryloyloxyalkyl phosphate is insoluble in water;
wherein said film-forming agent is a polymerizable compound; and
wherein said film-forming agent is miscible with a physiological saline solution.

2. (Canceled)

3. (Canceled)

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4. (Canceled)

5. (Canceled)

6. (Previously Presented) The bonding composition according to Claim 1, wherein an amount of said (meth)acryloyloxyalkyl phosphate is between 0.1 and 50% by weight per 100% by weight of said bonding composition.

7. (Original) The bonding composition according to Claim 1, wherein said film-forming agent is selected from the group consisting of a (meth)acrylate, an acrylamide, a crotonate, a cinnamate and mixtures thereof.

8. (Original) The bonding composition according to Claim 7, wherein said (meth)acrylate has a hydrophilic group selected from the group consisting of a hydroxyl group, a carbonyl group, an amino group, an ammonium salt group, a phosphonium salt group, a sulfonic acid salt group, an ether bond, a cyclic ether group and an acyl group.

9. (Original) The bonding composition according to Claim 1, wherein said film-forming agent is a polymerizable compound comprising 2-hydroxyethyl methacrylate.

10. (Original) The bonding composition according to Claim 1, wherein said film-

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forming agent comprises a hydrophilic monomer, a monofunctional (meth)acrylate and/or a polyfunctional (meth)acrylate.

11. (Original) The bonding composition according to Claim 10, wherein a blend ratio of said monofunctional (meth)acrylate and/or said polyfunctional (meth)acrylate is 0.1-40 parts by weight of a total weight of said bonding composition.

12. (Original) The bonding composition according to Claim 1, wherein said curing agent is a polymerization initiator or a mixture of a polymerization initiator and a polymerization promoter.

13. (Original) The bonding composition according to Claim 12, wherein said polymerization initiator is selected from the group consisting of a photo-polymerization initiator, a thermal polymerization initiator and mixtures thereof.

14. (Original) The bonding composition according to Claim 12, wherein said polymerization initiator is soluble in water.

15. (Original) The bonding composition according to Claim 12, wherein said polymerization initiator is selected from the group consisting of an α -diketone, a ketal, an anthraquinone, a thioxanthone, a benzoin alkyl ether, an acylphosphine oxide and mixtures thereof.

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16. (Original) The bonding composition according to Claim 12, wherein said thermal polymerization initiator is selected from the group consisting of a diacyl peroxide, a peroxy ester, a dialkyl peroxide, a peroxy ketal, a ketone peroxide, a hydroperoxide and mixtures thereof.

17. (Original) The bonding composition according to Claim 12, wherein said polymerization promoter is selected from the group consisting of an amine, a sulfinic acid, a salt of an amine, a salt of a sulfinic acid and mixtures thereof.

18. (Original) The bonding composition according to Claim 1, wherein an amount of said curing agent is between 0.05 and 20% by weight per 100% by weight of said bonding composition.

19. (Canceled)

20. (Canceled)

21. (Previously Presented) The bonding composition according to Claim 1, wherein said form-retaining agent is a particle.

22. (Original) The bonding composition according to Claim 21, wherein the mean

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particle size of said particle is between 1 and 300 micron.

23. (Previously Presented) The bonding composition according to Claim 1, wherein said form-retaining agent is a cross-linked polymer particle.

24. (Previously Presented) The bonding composition according to Claim 1, wherein an amount of said form- retaining agent is between 0.5 and 20% by weight per 100% by weight of said bonding composition.

25. (Previously Presented) The bonding composition according to Claim 1, wherein a pH value of an aqueous 1 weight % solution of said (meth)acryloyloxyalkyl phosphate is between 1.8 and 2.5.

26. (Previously Presented) The bonding composition according to Claim 1, wherein said composition is a liquid.